



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,546	01/07/2002	Gaurav Sharma		2437

7590 09/09/2005

Patrick R. Roche, Esq.
Fay, Sharpe, Fagan
Minnich & McKee, LLP
1100 Superior Avenue, 7th Floor
Cleveland, OH 44114-2518

EXAMINER

GIBBS, HEATHER D

ART UNIT	PAPER NUMBER
----------	--------------

2622

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/040,546	SHARMA ET AL.	
	Examiner	Art Unit	
	Heather D. Gibbs	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10 and 11 is/are allowed.
- 6) ☒ Claim(s) 1-9 and 12-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 January 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>01/07/02</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on January 07, 2002 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner is considering the information disclosure statement.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 48,100,102,104,106,108. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

4. Claim 2 recites the limitation "the previously printed colorants" in Line 14. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-9, 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Harrington (US 5,631,748).

Regarding claim 1, Harrington teaches in a color output system, a method of rendering a color document with a multi-level halftone process using a single screen for a plurality of color separations wherein the screen is comprised of a plurality of pixel locations associated with successive threshold values, the method comprising rendering at least one of the color separations at a pixel location with a selected output value from allowed output levels, said selected output value being determined by an input color value for the separation at the pixel location, a maximum output value allowed, the halftone screen, and input color values of previously processed separations (Col 4 Lines 21-58; Fig 1).

For claim 2, Harrington teaches the method as defined in claim 1 wherein the rendering of the at least one color separation is at pixel locations having threshold

values successive to the threshold values of the previously printed colorants (Col 5 Lines 50-61).

Considering claim 3, Harrington discloses the method as defined in claim 2 wherein the color image includes a black separation which is rendered first (Col 3 Lines 8-25).

For claim 4, Harrington discloses The method as defined in claim 3 wherein the rendering of a non black separation outputs a requested color amount in a non black area using a plurality of output levels comprising a darker and a lighter output levels and wherein, the darker output level occupies lowest available threshold values of the screen at a highest luminance in a non black area, and the lighter output level occupies other available threshold values of the screen in the non black area adjacent to the darker output level (Col 5 Lines 62- Col 6 Line 7).

For claim 5, Harrington teaches the method as defined in claim 1 wherein the color separations comprise Black, Magenta, Cyan and Yellow. And the method comprises printing the Black separation with a bi-level process and at least one of the Magenta, Cyan and Yellow separations with a multi-level process (Fig 1).

Regarding claim 6, Harrington teaches The method as defined in claim 5 wherein the printing of the at least one of the separations with a multi-level process comprises selecting a pixel location for the printing in accordance with a filling algorithm including a multiple level factor and a successive filling factor for better dispersion and minimal overlap of drops (Col 6 Lines 8-30).

Considering claim 7, Harrington teaches The method as described in claim 6 wherein the multi-level process comprises using multiple colorant drops at each pixel location (Col 6 Lines 31-39).

For claim 8, Harrington discloses the method as defined in claim 7 further comprising printing a plurality of ink drops per pixel location for multiple level half toning of the one color separation after tilling of the pixel locations to a base level (Col 4 Lines 40-47).

Regarding claim 9, Harrington discloses The method as defined in claim 8 wherein the printing of the plurality of ink drops for the one color separation comprises successively filling the pixel locations in accordance with increasing threshold values (Col 5 Lines 36-46).

Regarding claim 12, Harrington teaches A method for printing a color contone image with a plurality of color separations using color dots selectively comprised of a plurality of ink drops of one or more colorants, comprising: printing at least one of the colorants with the plurality of ink drops at pixel locations identified by a screen, wherein a base level comprising a minimal application of the ink drops, is maximally dispersed at selected ones of the pixel locations defined by threshold values of the screen, and any remaining value comprising a supplemental application of the ink drops, is likewise successively assigned to the selected ones of the pixel locations: and, wherein the selected ones of the pixel locations are further defined as successive to other pixel locations of the screen previously assigned to a prior printed colorant (Fig 2; Col 3 Lines 5-25).

For claim 13, Harrington teaches The method as defined in claim 12 wherein when all pixel locations have been assigned the supplemental application of the ink drops, subsequently applied colorants are assigned to pixel locations defined as having a lightest value relative to Black and the lowest thresholds of the screen with said lightest value (Col 5 Line 35- Col 6 Line 7).

Regarding claim 14, Harrington discloses A rendering apparatus for a color image represented in a halftone process by a plurality of color separations, comprising: a half toning screen generator for producing a screen having threshold values at pixel locations, wherein the values can be applied to contone image signals to derive a binary or multiple level image signal suitable to drive the apparatus,' and, a processor for rendering the color separations in accordance with the screen, wherein for constant image separation values, pixel locations are turned on for base and remaining level values of a color separation at the pixel locations disposed in a highest available luminance region having a lowest available threshold value (Col 4 Lines 18-47).

Considering claim 5, Harrington teaches The apparatus as claimed in claim 14 wherein the processor renders a black separation first and other color separations thereafter, and wherein one of the other color separation comprises a printing of multiple ink drops at lowest available threshold values of the screen at a highest luminance in a non black rendered area of the screen, and a printing of a single ink drop at other available threshold values of the screen in the non black rendered area adjacent to the multiple ink drops printing (Col 3 Lines 5-25).

Allowable Subject Matter

7. Claims 10-11 are allowed.


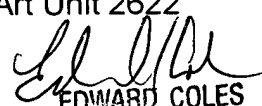
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Heather D. Gibbs whose telephone number is 571-272-7404. The examiner can normally be reached on M-Thu 8AM-7PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward L. Coles can be reached on 571-272-7402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

hdg


Heather D Gibbs
Examiner
Art Unit 2622

EDWARD COLES
SUPERVISOR
TECHNICAL EXAMINER